

# Chapter 526

## SpotLight

### Aircraft Build Project RV-12iS

*Author: Michael Murphy*



Michael & Karsten Murphy's RV-12iS

#### Introduction:

It was apparent early-on that my son Karsten was going to be a pilot. He flew simulators and remote-control airplanes since he was 4-years old. His enthusiasm is quite contagious, so I decided I wanted to join in on his aviation dreams. I earned my pilots certificate in May of 2020 and we began flying... a lot. It became readily apparent that we needed our own plane.

#### The Plane:

We decided on a Vans RV-12 and ordered the first build kit in late July 2020. It arrived on August 20<sup>th</sup>.

The build proceeded quickly, completing the empennage on September 9<sup>th</sup> and we promptly ordered more kits.

The wings came next and we had them completed in about a month. Kit quality is excellent. The kit can be built with hand tools and even more amazing is that all the holes line-up. Wings are easily assembled using just saw horses and at this point, our riveting skills are at the top of their game. Lots and lots of rivets.

We're still doing kit assembly in the garage and the hard part came next, the fuselage. The fuselage took the most work due to all the intricacies involved, focused on taking one step at-a-time.

The fuselage kit contains hundreds of nut-plates, wing attachment and landing gear hard-points, fuel lines, and brake plumbing. To further complicate the installation, many parts were backordered due to supply chain issues.

We persevered and completed a test fitting of the wings on March 11, 2021. Because of the space required we were now building at home and sometimes up in the hangar.



Empennage completed very quickly and ordered more kits



Wings took about a month to complete





Karsten Murphy - fuselage with wings attached.

Next came the finish kit. The single most complex job on the entire project was building the canopy.

The canopy is constructed on the completed airframe. It involved laying up epoxy fiberglass over "calibrated" layers of duct tape followed by days of sanding, filling, and painting. It required a small helper inside the plane.

The engine and avionics arrived in May and they were the most enjoyable part of the build.



Mounting Engine



Panel Layout



Michael and Karsten

#### Airworthiness:

The aircraft was completed in July, and passed its Airworthiness Inspection on July 25<sup>th</sup> 2021.

#### First Flight:

The first flight had to wait a few weeks, since I had RV-12 transition training scheduled with Vans in Oregon. I completed the training and was able to conduct the first flight on August 14, 2021. The flight went well with no discrepancies, so we decided to continue testing. All four test cards were flown that day with no issues! I completed the required 5-hour E-LSA fly off the next day, signed off the completion in the logbook, and took Karsten for our first flight together in our new airplane.



## Michael and Karsten Murphy's RV-12iS

**Engine:** Rotax 912iS, 100HP

**Propellor:** Sensenich 3-blade composite

**Avionics:** Garmin G3X Touch

**Construction Began:** August 20<sup>th</sup>, 2020

**First Flight:** August 14<sup>th</sup>, 2021



Michael Murphy after receiving the Airworthiness Certificate